

ABSTRACT

SURGICAL DEVICE FOR SKIN THERAPY OR TESTING

A device, and method of making the device, capable of therapeutic treatment and/or for *in vitro* testing of human skin. The device may be used on skin wounds for burned, injured, or diseased skin, and provides structures and functions as in normal uninjured skin, such as barrier function, which is a definitive property of normal skin. The device contains cultured dermal and epidermal cells on a biocompatible, biodegradable reticulated matrix. All or part of the cells may be autologous, from the recipient of the cultured skin device, which advantageously eliminates concerns of tissue compatibility. The cells may also be modified genetically to provide one or more factors to facilitate healing of the engrafted skin replacement, such as an angiogenic factor to stimulate growth of blood vessels. The inventive device is easy to handle and manipulate for surgical transplant, can be made into large sheets to minimize the number of grafts required to cover a large surface area to be treated, and can be produced within the time frame to treat a burned individual requiring a skin graft.

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